ABSTRACT

OPTIMIZATION AND VALIDATION OF HIGH PERFORMANCE LIQUID CHROMATOGRAPHY METHOD FOR THE ANALYSIS HYDROQUINONE IN CREAM

Hydroquinone (HQ) is used for threatment of hyperpigmented condition and also one of the active ingredients used in cosmetics. The objective of the present study was to optimize and validate the high performance liquid chromatography method for the analysis of a hidrqoquinone in cream. Chromatographic separation was achieved on Microbundapak C18 (3.9 x 300) 10 µm 125 A column and the mobile phase was a mixture methanol : water (40 : 60). The retention time for hydroquinone was 3.92 min, at flow rate of 0.8 mL/min. The UV detector was set 289 nm. The method was validated for specificity, linearity, accuracy, precision, limits of detection, and limits of quantification. The method was proved to be selective. Linearity showed linear respone (r = 0.9998) while correlation coeffecient of the function (V_{xo}) was 0.98% over the range of concentration used (between 5 mg L^{-1} to 35 mg L^{-1}). Accuracy of method was in range of accepted limits (97% - 103%), recovery was found to be in the average of 101.78%, while the precision was 1.25%. The detection limit is 0.06 ppm and the quantification limit is 0.18 ppm. The proposed method was successfully applied for the analysis of hydroquinone in cream

Keyword : HPLC, Hydroquinone, Validation Method